

Amendment
U.S. Patent Application No. 09/833,202

IN THE CLAIMS

1. (Currently Amended) A fuel cell comprising a gas diffusion electrode, a gas diffusion counter-electrode, a solid electrolyte membrane located between the electrode and counter-electrode, wherein the electrode or the counter-electrode or both comprise at least one modified carbon product, wherein said modified carbon product comprises a carbon product having attached at least one organic group, and wherein an active layer having a thickness of about 5 microns or less is present in said gas diffusion electrode or counter-electrode, or both.
2. (Withdrawn) The fuel cell of claim 1, wherein said solid electrolyte membrane comprises at least one modified carbon product, wherein said modified carbon product comprises a carbon product having attached at least one organic group.
3. (Original) The fuel cell of claim 1, wherein said gas diffusion electrode and gas diffusion counter-electrode each comprise a blocking layer and an active layer.
4. (Original) The fuel cell of claim 3, wherein said active layer or said blocking layer or both comprise at least one modified carbon product, wherein said modified carbon product comprises a carbon product having attached at least one organic group.
5. (Currently Amended) The fuel cell of claim 3, wherein said active layer has a thickness of less than about 10 microns from 2 microns to about 5 microns.
6. (Original) The fuel cell of claim 3, wherein said active layer comprises at least one modified carbon product, wherein said modified carbon product comprises a carbon product having attached at least one organic group and a metal catalyst.
7. (Original) The fuel cell of claim 3, wherein said active layer has no fluoropolymer binder present.

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8. (Original) The fuel cell of claim 1 wherein said solid electrolyte membrane comprises polytetrafluoroethylene.
9. (Withdrawn) A fuel cell comprising a gas diffusion electrode, a gas diffusion counter-electrode, a solid electrolyte membrane located between the electrode and counter-electrode, wherein said solid electrolyte membrane comprises at least one modified carbon product, wherein said modified carbon product comprises a carbon product having attached at least one organic group.
10. (Original) The fuel cell of claim 1, wherein said organic group is $-C_6H_4SO_3^-$.
11. (Withdrawn) A method to reduce the thickness of a solid electrolyte membrane comprising forming said electrolyte membrane with a modified carbon product, wherein said modified carbon product comprises a carbon product having attached at least one organic group.
12. (Withdrawn) A method for increasing catalyst accessibility in an electrode comprising forming an active layer with a modified carbon product in the absence of a fluoropolymer binder, wherein said modified carbon product comprises a carbon product having attached at least one organic group.
13. (Withdrawn) The method of claim 12, further comprising the deposition of a catalytic material on said modified carbon product.
14. (Original) The fuel cell of claim 1, wherein said organic group is a proton conducting group, an electron conducting group, or both.
15. (Withdrawn) The method of claim 11, wherein said organic group is a proton conducting group, an electron conducting group, or both.
16. (Withdrawn) The method of claim 12, wherein said organic group is a proton

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conducting group, an electron conducting group, or both.

17. (new) A fuel cell comprising a gas diffusion electrode, a gas diffusion counter-electrode, a solid electrolyte membrane located between the electrode and counter-electrode, wherein the electrode or the counter-electrode or both comprise at least one modified carbon product, wherein said modified carbon product comprises a carbon product having attached at least one organic group, and wherein said active layer comprises a carbon support that comprises at least one modified carbon product and, wherein catalyst particles are directly on the carbon support.

18. (new) The fuel cell of claim 17, wherein said catalyst particles are metal catalyst particles.

19. (new) The fuel cell of claim 17, wherein said catalyst particles comprise Pt.

20. (new) The fuel cell of claim 17, wherein said active layer has a thickness of from about 2 microns to about 5 microns.

21. (new) The fuel cell of claim 17, wherein said catalyst particles are attached or adsorbed onto the modified carbon product.

22. (new) The fuel cell of claim 17, wherein said active layer is formed directly on the solid electrolyte membrane.

23. (new) The fuel cell of claim 21, wherein said catalyst particles that are attached or absorbed onto the modified carbon product comprise a cationic metal catalyst complex that is attached or adsorbed onto the modified carbon product.

24. (new) The fuel cell of claim 21, wherein said catalyst particles that are attached or adsorbed onto the modified carbon product is a catalyzed treated carbon product.

25. (new) The fuel cell of claim 24, wherein said catalyzed treated carbon product is

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partially or fully hydrophobic.